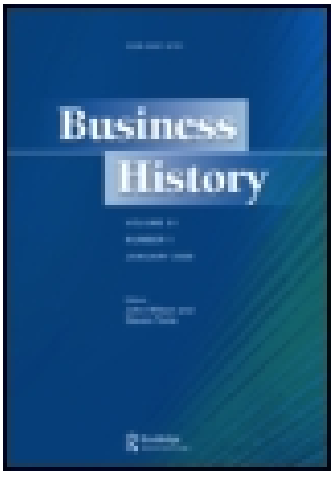
This article was downloaded by: [Stony Brook University]
On: 14 October 2014, At: 08:41
Publisher: Routledge
Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Business History
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/fbsh20

'A knavish people…': London Jewry and the stock market during the South Sea Bubble

Ann M. Carlos [a], Karen Maguire [b] & Larry Neal [c]

[a] Department of Economics, University of Colorado at Boulder, USASchool of Economics, University College Dublin, Ireland

[b] Department of Economics, University of Colorado, Boulder, USA

[c] Department of Economic History, London School of Economics, London, UK

Published online: 06 Nov 2008.

To cite this article: Ann M. Carlos, Karen Maguire & Larry Neal (2008) 'A knavish people…': London Jewry and the stock market during the South Sea Bubble, Business History, 50:6, 728-748, DOI: 10.1080/00076790802420039

To link to this article: http://dx.doi.org/10.1080/00076790802420039

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms &

Conditions of access and use can be found at http://www.tandfonline.com/page/terms-and-conditions

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Business History
Vol. 50, No. 6, November 2008, 728–748

Routledge
Taylor & Francis Group

'A knavish people…': London Jewry and the stock market during the South Sea Bubble

Ann M. Carlos[a]*, Karen Maguire[b] and Larry Neal[c]

[a]*Department of Economics, University of Colorado at Boulder, USA, School of Economics, University College Dublin, Ireland;* [b]*Department of Economics, University of Colorado at Boulder, USA;* [c]*Department of Economic History, London School of Economics, London, UK*

Downloaded by [Stony Brook University] at 08:41 14 October 2014

In an era when financial markets were only beginning the move from personal to impersonal relations, this paper examines the role of Jewish brokers in the market for Bank of England stock at a time when their status as recent immigrants, subject to constraints due to religion and ethnicity, made them unlikely intermediaries beyond their own communities. Using formal network analysis, an examination of their activity during the first half of 1720 suggests a marginal role. However, as the Bubble began to burst a few Jewish financiers became disproportionately involved as purchasers of a stock clearly on the decline.

Keywords: capital markets; micro-structure; South Sea Bubble; London Jewry; networks

> Their unremitting diligence and constant attention to the main object of all their undertakings; their unquenchable thirst for wealth. (Quoted in Endelman, 1979, p. 97)

Introduction

Expelled from England in 1290, Jews returned openly to London only in 1656 under the protection of Oliver Cromwell. By the time of the South Sea Bubble in 1720, scholars maintain that London's still small numbers of Jews specialised in overseas trade and brokering (Pollins, 1982; Yogev, 1978). Their connections with the trading world of Amsterdam, Portugal and Brazil are understandable; their role as brokers in London is more questionable.[1] Within their tightly knit community the ties that bound provided avenues for information and control, generating, in turn, trust and reciprocity. By reducing the costs of conducting interregional and international trade, these ties and connections, which we can refer to as social capital, play an important role in explaining Jewish networks in the international trading sphere. Share markets, however, need connections across groups and not merely within groups; brokers need connections or social capital that links them outward into the dominant groups. The strong social

*Corresponding author. Email: ann.carlos@colorado.edu

ISSN 0007-6791 print/ISSN 1743-7938 online
© 2008 Taylor & Francis
DOI: 10.1080/00076790802420039
http://www.informaworld.com

networks within international Jewry seem less well-suited to explain dominance in a secondary market in shares.

Over the course of the century before 1720, a secondary market in financial stocks had emerged in both Amsterdam and London. While this market was initially stronger in Amsterdam, London was the pre-eminent market by 1720. Jewish brokers in Amsterdam might well have wanted access to this growing market, giving London's Jews a role as liaisons or agents between the Dutch community and the London market.[2] Brokering, however, requires more. It requires that an individual stand ready to buy or sell a share (market making) and be able to put one party in touch with another party. At a minimum, intermediation requires information and connections. Although the early eighteenth century witnessed the beginnings of the shift from personal to impersonal finance, this was still a world in which personal and business relationships were significantly determined by family and kinship links, as well as shared religious, occupational and political beliefs. Not only were Jews outside of London's elite political, religious and kin circles, but they were also a relatively new immigrant group. Indeed, the quotation opening this paper, coming from mid century, evokes a long-standing prejudice towards international Jewry. Despite the fact that religion separated many groups in England, such as Catholics or Dissenters, London's Jewry was more disconnected from the mainstream than most. It can, therefore, be asked in what sense could members of this relatively new and Jewish community, one whose rights were circumscribed, act as intermediaries beyond their own immediate group?

This paper, thus, explores the role of Jewish players in the secondary market for shares and, more particularly, the ways in which social capital determined brokering activities by individual members of London Jewry. From the transfer books of the Bank of England, we have information on the almost 7000 transfers of Bank stock during 1720, the year of the South Sea Bubble. Using social network analysis we measure the strength of brokering activity by Jews and the strength of ties between Jewish and non-Jewish communities (Granovetter, 1983, 2005). Beyond measuring Jewish participation in the market, this analysis allows us to trace the lines of connection between any one trader and another; in other words, through whose hands a share passed into or out of the Jewish community. More specifically, we focus on the role played by Francis (Aaron) Pereira, a Sephardic Jew, and Moses Hart, an Ashkenazi, both of whom were important financiers of the period, as well as important figures in their respective communities.[3]

We begin with a brief overview of London Jewry from 1650 to 1750 and of the London stock market before and during the South Sea Bubble of 1720. This is followed by discussion of the structure of networks and the role played by social capital. From the information provided in the transfer books, we find relatively few members of the Jewish community buying or selling stock. However, the book value of bank stock involved was larger than their numerical share of the market. We also find that Francis Pereira and some others only started to act as brokers during the Bubble. Thus despite the prevailing stereotypes and fears about doing business with Jews, some of London's Jewry were heavily involved in the market for bank stock. Furthermore, the timing of Pereira's involvement with the market raises important questions concerning the role played by Jewish financiers in sustaining the development of the early London stock market.

Brief historical background

Jews were expelled from England around 1290. Two centuries later, they were expelled from Spain and Portugal.[4] Moving into communities across Europe, North Africa and the

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Ottoman Empire, the Iberian expulsion generated a Sephardic community linked by family and commercial ties. Encouraged by the growth in the international economy and the long-distance trades and protected by the treaty of 1630 with Spain, New Christian Spanish merchants settled in London.[5] In 1655, when war with Spain threatened these merchants with confiscation of goods and ships, some claimed refugee status as Spanish Jews (Endelman, 2002).

Two forces building over the previous decades made it feasible for Jews to think that they might live openly in London. The first was theological or eschatological, stemming from the growth of millenarianism, found especially among radical Puritans and some in the Amsterdam Jewish community. Both groups believed that for a Messiah to come, Jews had to live everywhere.[6] The second force was financial. Wars needed finance and armies, and here Jewish financiers, such as Machado and Pereira, were among the leading companies. Thus, Cromwell had both personal theological motives for wanting the readmission of Jews and pragmatic financial reasons. When wider support for readmission was not forthcoming, Cromwell tacitly allowed Jews to live openly in London but never rescinded the expulsion order of 1290. Over the next five decades, especially at times of regime change, merchant (and religious) communities in London pushed to have Jews expelled; while the Crown continued to suppress such attempts. The Crown needed access to financial services and, perhaps, its protection afforded it a bargaining position. Thus the protection afforded London's Jewry was personal and potentially precarious. Despite this, the initial population grew to 450 by 1680 and 850 by 1695. In 1720, relative to a London population of at least 600,000, there were probably no more than 2500 Jews living in London, of whom roughly 1000 were Sephardic and 1500 Ashkenazi from Poland and Germany.[7]

All who would not take the Christological oaths could not be Freemen of the City of London, or members of the livery guilds, or hold public office, or get degrees from Oxford or Cambridge. Nor could they open retail businesses within the City limits. So in this sense Jews were no more restricted than English Catholics or Dissenters. In addition, foreigners could not own property and could be expelled from the country. Jews born in London were English and could own property, but as Jews, they were aliens and could be expelled.[8] Thus, while by the first decades of the eighteenth century, even though London's Jewish community was probably less threatened than in other parts of Europe, it was still relatively new and outside the existing social fabric created by family, religion, business or politics.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

The stock market and the South Sea Bubble

Joint-stock trading companies emerged as a unique business form around the beginning of the seventeenth century. These were limited liability firms in which a person owned a share in the company, which itself was a legal entity, and the company acquired its capital by selling shares to the public. Initially stock was closely held, but over time a secondary market for shares emerged. Such a secondary market for shares is a stock market in which people buy and/or sell for their own individual personal financial reasons. By 1720, a well-developed secondary equity market had developed in London. The market was not one physical site; rather transactions took place in several different locations. A buyer or seller could go to the head offices of individual companies, such as East India House or the Bank of England building, and match up with a counterparty. Another venue operated in the coffee houses in Exchange Alley, such as Jonathan's and Garraway's (see Figure 1).[9] Alternatively one could use a known dealer/jobber/broker who bought and sold shares. In

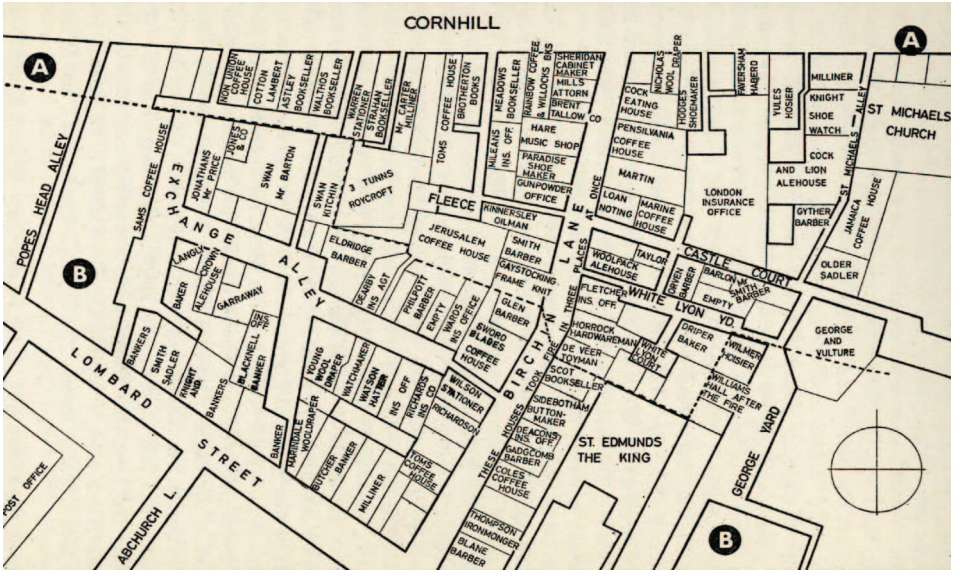


Figure 1. Coffee shops in Exchange Alley.

all respects, the market in 1720 was more subject to personal interactions or less anonymous than is the stock market today.

With the general freedom allowed printers after the accession of William III to the throne of England in 1688, a number of print sources informed current and potential investors on developments in this emerging securities market. While newspapers began inserting regular paragraphs on the latest prices, perhaps even more useful, a specialised publication, John Castaing's *Course of the Exchange*, began regular appearance by at least 1698.[10] Castaing's publication appeared twice weekly, on Tuesdays and Fridays, coinciding with the departure of mail packet boats for the Dutch port at Hook of Holland. Each issue contained the prices of the major securities over the previous three days, plus the latest exchange rates for bills of exchange on major European cities.[11] Thus, those living outside London, in Amsterdam, or further afield, had information about the general state of the London market. One important consequence was that shares were more transparently priced. A person buying or selling would have to spend less time searching for price information. Because ownership of a share was well defined and easily transferable, and prices transparent, shares were a liquid financial asset.[12] It was, in fact, the very liquidity of shares that helped to generate the South Sea Bubble of 1720.

In the years following the Treaty of Utrecht in 1713, the English government grew increasingly concerned about the size of its outstanding debt. The monied companies – Bank of England (1694), New East India Company (1698) and the South Sea Company (1710) – had already shown that a swap of government debt for company equity could reduce the government's debt service. In 1719, a proposal to undertake a further debt-for-equity swap came from the directors of the South Sea Company, but Bank of England directors quickly made a counter-proposal. The impact of this competition was to increase the size of the loan, or the price, that each company offered the government for the privilege of undertaking this swap. Ultimately, in early 1720, the South Sea Company offer was chosen. The bare outlines of the agreement were that the government would receive a

Downloaded by [Stony Brook University] at 08:41 14 October 2014

£7.5 million loan from the South Sea Company, while the Company would issue roughly £31 million shares of new capital; roughly half to be exchanged for existing government debt and the remainder as a new share issue (see Neal, 1990; Dickson, 1967).[13] For our purposes, the main implications of this debt-for-equity exchange is that it brought the existing holders of government debt into the flourishing market for equities, while the potential for capital gains attracted new purchasers.

The bubble began in February 1720 with Parliamentary approval of the South Sea Company's plan to redeem outstanding government debt not already held by that Company, the Bank of England or the East India Company. The higher the market price of South Sea stock the more attractive would be the inducement for debt holders to exchange government debt for company stock and the more attractive also for the South Sea Company, which would need less stock per unit of debt redeemed.[14] Thus, incentives were set for the company directors to focus on the market value of the existing stock. Rather than place all the stock issue on the market at once, the company did so in a number of subscriptions. The enthusiastic response by debt holders was such that, with each successive subscription of new stock, the price of South Sea shares rose spectacularly, and with it the share prices of other companies also rose.[15]

Such was the demand that the South Sea Company had to cease transactions from 23 June to 22 August 1720 to allow clerks time to record all of the subscriptions received.[16] When transfer books reopened in August, the opening South Sea company price was essentially as in mid-June. Immediately, however, the price began to fall, resulting in a general scramble for liquidity. In September 1720, the South Sea Company tried to enlist the Bank of England in completing the debt conversion, but this failed, and prices continued to fall, ending the year essentially where they had begun.[17] The Bank of England was, therefore, an important player in the market during and immediately after the South Sea Bubble, the name given to the rise and fall of share prices in 1720. Bank of England shares started the year at 150 above par, rose to 180 in May, 250 in June, falling back to 147 on the last day of the year as shown in Figure 2.

Networks and social capital

The secondary market for shares that had developed by 1720 was anonymous as to social status, class, occupation, gender or religion, in that a person from any social class, gender, occupation, location (including foreign) or religion could buy or sell a share (see Carlos & Neal, 2006). At the same time, the buying or selling of a share was more often than today a face-to-face transaction, and it is here that outsiders might have had a more difficult time than insiders connected by family, business, religion or politics. The buying of a share on the secondary market required some level of information. The desire to buy a share presupposes that the person already had some information about what share purchase meant and what benefits might accrue.[18] It also requires knowledge on where to go, what to ask for and what forms to file. Information of this type is a public good. One shareholder's knowledge does not impinge on what another shareholder can know. In 1720 in London there were two potential and certainly not mutually exclusive sources of such information or knowledge: the print media and interpersonal networks.

The print media diffused the information necessary for the effective operation of securities markets and were widely available by 1720. Networks connect individuals to information by linking people together (see Burt, 1987; Granovetter, 1973, 1983; Huckfeldt & Sprague 1987; Kelly & Ó Gráda, 2000; Laurence, 2008; Montgomery,

Downloaded by [Stony Brook University] at 08:41 14 October 2014

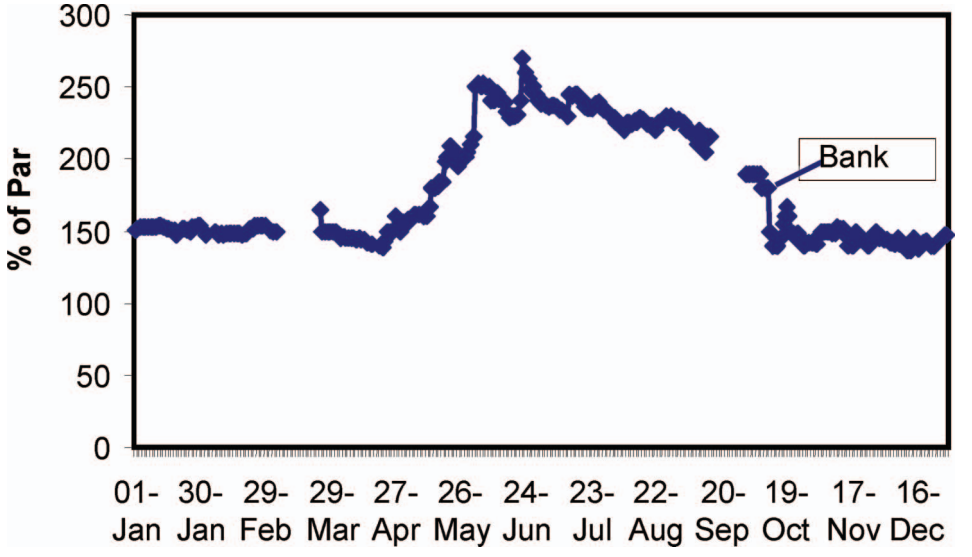


Figure 2. Price of Bank of England shares.
Source: Neal, 1990.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

1994; Wasserman & Galaskiewicz, 1994). Interpersonal networks reduce the costs of gathering information or provide easier access to information, although with no presumption that the information is accurate. Where trade is not anonymous and information does not flow freely, these networks also increase trust among market participants. At the same time, networks reflect both choice on the part of the individuals within them and the social structures in which the individuals are embedded. While an individual can choose with whom to spend time and share information, networks are partly determined by geography, occupation, social customs, religion and mores, which in turn constrain the set of choices facing any single individual. Nonetheless, belonging to a pertinent network provides a short cut for acquiring and evaluating the information. Networks, therefore, change the costs of information and as a result of repeated interactions they may also build trust and reciprocity between members as they learn about one another. Networks, thus, are a mechanism through which the social capital of a society operates.[19]

The extent of benefits and costs from any given network vary by network. Obviously, networks are not all going to have the same characteristics; for instance, they can vary by size. Burt has argued that bigger networks are better than smaller ones because 'more contacts can mean more exposure to valuable information, more likely early exposure, and more referrals' (Burt, 1992, p. 16). Granovetter (1973, 1983), examining the question of frequency of interaction – where more frequent interaction means stronger ties – has focused on the strength of ties. Interestingly, he argues that networks built on strong ties can quickly exhaust the information in the network, thus pointing to the 'weakness of strong ties'. Networks based on weak ties can gather new information because weak networks may expose people to more information as they tend to tie diverse groups together. As a result of these loose links, individuals can move beyond what might otherwise be considered a tightly knit environment determined by geography or social structures.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

London Jewry in the early eighteenth century was essentially a strong network defined by ties of kin, business, language and dress. Although in reality there was not one but two quite separate communities, composed of the quite distinct Sephardic and Ashkenazi groups. Even the Sephardic and Ashkenazi communities were not themselves monolithic. There were splits and divisions within each (see, for instance, Goldish, 1994). Indeed, by 1700 groups had their own synagogues. The very ties that bound the Sephardic and Ashkenazi communities were of course the very ties that separated them from one another and from the larger London communities. Language, religion, dress and the use of their own shops and shopkeepers reduced the number of interactions between Jews and everyone else and more readily defined Jews as outsiders.[20] Clearly, the non-Jewish communities were not homogeneous either, being comprised of separate but interlocking groups. These groups, however, usually spoke a common language, and their connections were reinforced more broadly by kin, business, politics or religion. Overlapping circles created *bonding, bridging* and *linking* social capital, generating bonds between and across the non-Jewish communities.[21]

By 1720, coffee shops had become focal points of activity for the burgeoning stock market and so a location for bridging social capital, as well as for bonding social capital. As focal points, Jonathan's or Garraway's (shown in Figure 1) reduced the cost of information gathering and made it more convenient for buyers and sellers to locate counterparties or to find a broker. But for the more observant members of the Jewish community, these coffee houses were problematic. It was not that observant Jews did not drink coffee. We know there were coffee houses in the Jewish ghettos of Venice and Verona. Indeed, in response to a question in the sixteenth century about coffee and coffee houses, Rabbi David ibn Abi Zimra (d. 1573) wrote that he saw no problem with the beverage being prepared by a non-Jew, both because separate utensils were used for coffee and because it was too insubstantial an item to fall under the prohibition of *bushulei nokhrim*. Coffeehouses were another matter entirely, prompting him to state: 'I do not consent to its being drunk at a meeting place of non-Jews, for this has some undesirable consequences and the Jews are holy' (Horowitz, 1989, p. 22). Not all Jews in London were observant. But for those who were, an inability to access information and counterparties at a coffee house would further reduce ties between the minority and majority groups.

Alien language, religious observance, diet, dress and language, which contributed to an overall lack of bonding, bridging and linking social capital all suggest that Jews should not have been heavily involved in the secondary market for shares in early eighteenth-century London. They were very clearly outsiders. Yet historical and contemporary descriptions of London Jewry indicate that members of this community were major players in the capital market as stock jobbers and brokers. The anti-Semitic rhetoric that followed the Jewish Naturalisation Bill of 1753 makes this clear: 'They deal largely in the Mysteries and Iniquities of Stock-jobbing, and get vast Estates by plundering the Publick ... They are all griping Usurers' (Cranfield, 1965, p. 21). 'Britannicus', a pen name for one of the more forceful writers on this issue, argued that Jews did not engage in trade which was vital for England's survival, but rather made their money in '"Stock Jobbs, Lotteries, and other iniquitous Arts of Exchange Alley"' (Cranfield, 1965, p. 21). Certainly, the *London Evening-Post* was more concerned with inflammatory rhetoric than facts.[22] Yet if the local population believed that the Jews were '"a knavish people, who will over-reach and cheat you if they can ... so dextrous in bargaining that it is impossible for Christians to expect any advantage in their dealings with them"' (Endelman, 1979, p. 98), it is difficult to see how any member of either the Sephardic or Ashkenazi community could act as broker for the larger non-Jewish community.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Bank of England stock and its Jewish shareholders

Joint-stock companies kept exceptionally good records of who owned their stock for two important reasons. First, they had to know to whom to pay dividends. Second, eligibility to vote or to sit on a board of directors (Court of Assistants) required ownership of specified numbers of shares which, in turn, meant that companies had to know how many shares any given individual owned. Thus, transfers of shares were meticulously recorded. Here we focus on transactions in the Bank of England shares which, by 1720, can be considered the blue-chip stock in the market. The transfer ledgers (AC28/1545–1554) note name, address, occupation or social status, date, and book value of the transfer for every seller and buyer of Bank of England stock. These records provide an accurate picture of the spot market for bank stock. The records do not tell us about the forward market, nor do they tell us the exact price at which the transaction took place. However, from the financial press we know the daily listed price.

We use name as the leading indicator for whether someone was Jewish. Members of the Sephardic community stand out – Pereira, da Costa, Nunes, Fernandez, Peixota, Macado, for example. Members of the Ashkenazim from Eastern Europe, such as Moses Hart and Isaac Levy, are perhaps less readily identifiable and so we have coded all male individuals with biblical first names – Moses, Abraham, Isaac, Solomon – as Jewish. This, of course, is an upper bound estimate in that some individuals may not have been Jewish, but it is unlikely to create a serious bias as the majority of those identified as Jewish were small participants in the market.[23] One exception is Abraham Craiesteyn. Craiesteyn was a top-ten buyer and seller of bank stock. In the event that he was not Jewish, and we think he probably was not, we will be misattributing his activities to Jewish brokers. Therefore, in all following tables we provide estimates with and without Craiesteyn. Despite his being a major actor in the market for bank stock, we find little change in the results stemming from his transactions.

Over 1720, the book value of transfers of the Bank of England stock was £6.2 million.[24] With a book value of capital stock at £5.5 million, and recognising that not all who owned stock sold in 1720, the volume of activity or turnover in bank stock is very large. There were 7275 transactions between 3872 individuals acting as a buyer, a seller, or buyer and seller.[25] The vast majority of individuals were in the market only once, either as a buyer or seller. Using our criteria, we can define only 166 people as Jewish. This is 4.3% of all unique individuals. Of these 166 individuals, 93 both bought and sold shares; the other 73 were either only buyers or only sellers. Thus in terms of just the number of investors, London's Jews were a small fraction of the market in bank stock.

Of course, the number of unique individuals is only one measure of market penetration because a single individual could have many transactions. We find that Jews were involved in 656 sale transactions and 824 purchase transactions for a total of 1480 transactions, of which only 166 were between two Jews.[26] So the majority of transactions were between Jewish and non-Jewish stockholders. Jews were the sellers in 9% of sale transactions and purchaser in 11% of all purchase transactions, meaning that Jews were involved in roughly 20% of total transfers. Despite the prevailing stereotypes and fears, a Jew was the counterparty in one-fifth of all transactions in Bank of England stock across 1720. When we consider the value of their activity, we find that the book value of sales was £512,949 or 8% of the total book value of transfers; book value of stock purchases was £669,882 or 11% of the value of purchases. Jews were, therefore, net purchasers of bank stock, discussed further below. The average book value of transfers by Jews, whether buying or selling, was significantly larger than the average sale or purchase for the market as a whole:

Downloaded by [Stony Brook University] at 08:41 14 October 2014

£3090 for sales and £4035 for purchases relative to £871 per capita for the whole market (Carlos & Neal, 2006).[27]

As shown in Figure 2, price changes in bank stock were not uniformly spread across 1720. Prices started to rise in April and May, reaching their zenith in July. August and September saw falling prices, and, by the end of the year, prices were where they had been in January. The monthly pattern of sales and purchases reflected the movement in prices and are shown in Tables 1a and 1b. Because of our concern that Abraham Craiesteyn, a major broker, might not be Jewish, we show monthly sales and purchases by Jews, including and excluding Craiesteyn. While the numbers change slightly, the main results carry through in all cases. In the first six months of the year, Jewish shareholders were involved in less than 10% of sale transactions by month increasing from a mere 12 sales in January to 93 sales in June. Sale activity increased in the second half of the year, reaching 18% and 15% of all transactions in November and December. As buyers, Jews again comprised less than 10% of purchasers in the first six months of 1720, increasing from 19 purchases to 76. This activity constituted a small part of aggregate activity in bank stock. Jews, however, became especially important after the downturn of the Bubble. They were involved in 12% of purchases in July but 29% in August and 21% in September. Purchases fell back to 11% to 14% of monthly activity for the last two months of the year.

The distribution of activity by book value shows the same pattern as the number of transactions. Jews purchased and sold less than 10% of book value in the first six months of 1720. In August, London Jewry purchased £146,714 book value of stock or 26.5% of the total book value of stock purchased in that month, while their book value of sales was only £30,994 or 5.59%. In September, Jews purchased £65,129 book value or 20% of the book value of sales. Thus, just as the price of South Sea stock was plummeting and the resulting scramble for liquidity was driving the price of bank stock down further, Jews were buying. These Jewish purchases helped stabilise the price of bank stock and slow its decline. This increased representation of Jews in the market for Bank of England stock is striking. The overall book value of bank shares purchased in August 1720 was almost three times the book value in the previous month. In this declining market, non-Jews were

Table 1a. Number of transactions by sale and purchase.

	Number of transactions by month	Sale transactions Jews only[1]	Sale transactions by Jews (%)	Buy transactions Jews only	Buy transactions by Jews (%)
January	325	12 (8)	3.69 (2.46)	19 (18)	5.85 (5.54)
February	821	50 (46)	6.09 (5.60)	48 (43)	5.85 (5.24)
March[2]	289	14 (11)	4.84 (3.80)	25 (20)	8.65 (6.92)
April	775	26 (22)	3.35 (2.84)	44 (38)	5.68 (4.90)
May	1131	90 (73)	7.76 (6.45)	96 (96)	8.45 (8.45)
June	937	93 (80)	9.93 (8.54)	76 (75)	8.11 (8.00)
July	507	59 (55)	11.63 (10.85)	62 (57)	12.22 (11.24)
August	698	55 (45)	7.88 (6.45)	203 (195)	29.08 (27.94)
September	416	53 (49)	12.74 (11.79)	88 (85)	21.15 (20.43)
October	411	47 (46)	11.44 (11.19)	45 (40)	10.95 (9.73)
November	536	94 (92)	17.54 (17.16)	58 (46)	10.82 (8.58)
December	429	63 (58)	14.68 (13.52)	60 (55)	13.99 (12.82)
Totals	7275	656 (585)		824 (768)	

Notes:
[1]The number in brackets refers to the total without Abraham Craiesteyn throughout the tables.
[2]The transfer books were closed for two weeks in March for the semi-annual dividends.

Table 1b. Book value of transfers by sale and purchase.

	Book value of shares sold by Jews	Book value of shares sold by Jews (%)	Total book value of transfers	Book value of shares purchased by Jews	Book value of shares purchased by Jews (%)
January	10,750 (5,750)	2.81 (1.50)	382,007	14,650 (14,150)	3.84 (3.70)
February	78,400 (73,900)	7.99 (7.52)	981,533	68,700 (64,700)	7.00 (6.82)
March	13,500 (10,500)	4.48 (3.48)	301,632	23,800 (18,800)	7.89 (6.23)
April	21,600 (18,600)	3.15 (2.72)	685,122	36,750 (32,050)	5.36 (4.68)
May	80,109 (60,609)	8.34 (6.31)	961,023	78,590 (78,590)	8.18 (8.18)
June	68,806 (61,206)	10.21(9.08)	673,948	62,347 (61,347)	9.25 (9.10)
July	31,429 (28,429)	8.17 (7.39)	384,547	57,000 (53,200)	14.82 (13.83)
August	30,994 (25,494)	5.59 (4.60)	554,227	146,714 (138,514)	26.47 (25.00)
September	33,979 (29,479)	10.43 (9.05)	325,672	65,129 (63,129)	20.00 (19.38)
October	36,100 (35,100)	9.94 (9.67)	363,051	34,200 (30,300)	9.42 (8.35)
November	65,432 (63,932)	18.56 (18.13)	352,524	42,277 (35,027)	11.99 (9.94)
December	41,850 (35,850)	14.63 (12.53)	286,083	39,725 (36,725)	13.89 (12.84)
Totals	512,949 (448,849)	8.21 (7.18)	6,251,369	669,882 (626,538)	10.72 (10.02)

Source: Bank of England, Transfer Ledgers, 1720.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

clearly willing to sell to members of the Jewish community, whatever their own personal perception of that community might have been. Of course, as net purchasers of bank stock Jewish eligibility to vote in the annual general meetings increased.

Social network analysis allows us to examine the pattern of activity more spatially and to understand better how people relate to one another (Wasserman & Galaskiewicz, 1994). Each transfer links an individual seller with an individual buyer; each such pair of agents and the tie between them is called a *dyad* in network analysis. For any two individuals in the market for bank stock this tie can take one of four possible forms: no connection between two given traders (0,0); trader 1 buys from trader 2 but not the reverse (1,0); trader 1 sells to trader 2 but not reverse (0,1); finally, trader 1 buys from and sells to trader 2 (1,1). Although the relationship between individuals in a share market is not necessarily symmetric in that the same people do not all buy and sell only with each other, the relationship is directed in that someone who wants to buy has to find someone who wants to sell.

In this framework, we can measure how those in the market are connected. *Density* refers to the number of *actual* links in the network compared with the number of *possible* links. For example, if g defines the number of agents, then $g(g\text{-}1)/2$ represents the maximum number of lines in the network graph. For example if $g = 5$, then the maximum possible number of possible connections between these five agents is 10 as shown in this very simple schematic (Figure 3).

Of course, the actual number of links between these five agents could be zero. So if L represents the number of actual links between agents, density is measured as $2L/g(g\text{-}1)$ or the number of actual links relative to all possible links. As the number of possible ties increases exponentially with the number of agents, the density measure decreases with the size of the network and so it will be very small when there are a very large number of possible linkages. *Distance* measures the shortest path between any two agents. In the schematic given in Figure 3 which is essentially a circle network, the distance between agent A and any other agent is one, and similarly for all agents. A distance of two can be thought of as 'a friend of a friend'. If the agents in this schematic were laid out in a line, the distance between A and E would be four.

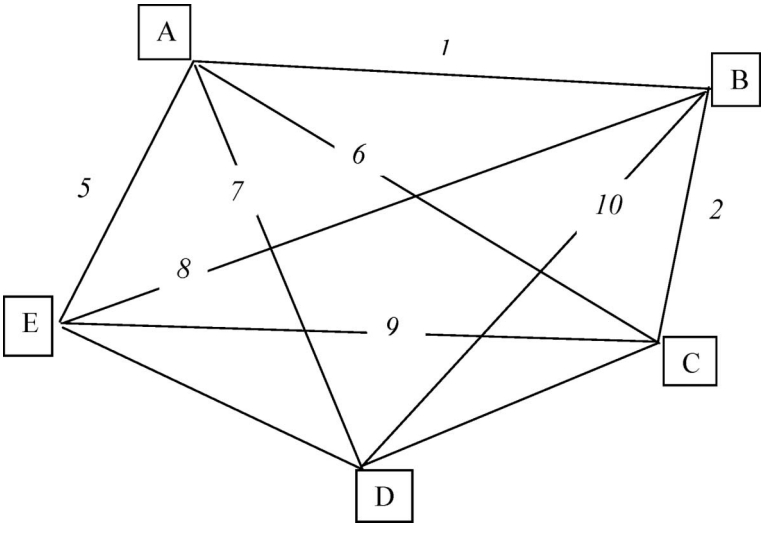


Figure 3. Simple schematic of circle network.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Density and distance provide one summary of the how agents are related within the market. Reflecting the large number of people buying and selling shares, the density measure for the market in Bank of England shares is very low at 0.0005.[28] Yet all traders are connected in this market through the movement of stock, in that A sells to B who then sells to C.[29] For Bank of England shares in 1720, the average distance between agents was 4.593 implying that on average any two traders in the network were connected through only three to four other traders. London Jewry comprised a very small part of this loosely connected market, but they were part of it. If we only consider those transactions that involved a Jew and calculate density and average distance on this reduced network, density increases to 0.0011 as expected and the average distance between reachable pairs is now 3.16. However, not all actors were equally involved in the market. Indeed, as we noted earlier, nearly 80% of all traders who bought or sold bank stock had at most two transactions (Carlos & Neal, 2006). This pattern also held within the Jewish community, although proportionally more were involved in more than two transactions. Roughly 9% of all Jewish traders were involved in ten or more transactions, whereas for all involved in bank stock the proportion is 4%.

The distance measure suggests that people are connected through brokers or central figures. Centrality is another measure of distance and describes how an individual actor is situated within the larger network. *Degree centrality*, for instance, is measured along two directions: *out degree*, which in our case relates to the number of sales, and *in degree* which measures number of purchases.[30] It essentially measures how much business a person conducted. The most important Jewish traders were Francis (Aaron) Pereira with 62 sales and 109 purchases, and Moses Hart, with 31 sales and 41 purchases. Francis Pereira was Sephardic, while Hart was Ashkenazi. Pereira had the highest level of *degree centrality* among Jewish traders, followed by Moses Hart.[31] More importantly, perhaps, when measured across all those selling or buying bank stock, Jewish or non-Jewish, Pereira ranked eleventh and Hart twelfth in terms of out degree (sales), and fifth and thirteenth in terms of in degree (purchases). Both men were broker/jobbers standing ready to buy and sell from any wishing to sell or buy, which argues for a degree of connectedness with the

market as a whole and for a willingness by some non-Jews to interact with both Pereira and Hart (see Carlos, Neal, & Wandschneider, 2007 for a discussion of brokers in bank stock).[32]

Where *degree centrality* measures the amount of business conducted by an agent, *betweenness centrality* measures his or her centrality within the flow of transfers; the extent to which an agent acted as a node between others. Employing this measure, Francis Pereira ranked fourth in the whole market behind Sir George Caswall, Robert Westley (a merchant tailor) and James Martin (goldsmith).[33] Moses Hart was seventh. In the top 15 most active traders in bank stock ranked by *betweenness centrality* we find other members of the Sephardic community: Anthony da Costa, Solomon Pereira and perhaps Abraham Craiesteyn. Despite their individual centrality in the market for bank stock, it does not appear that the Sephardic and Ashkenazi communities in London were closely connected, even in terms of their common interest in the active securities trade that had arisen in 1720. Out of his 62 sales, Francis Pereira had only one sale on 17 May to Moses Hart for £1000 book value. Moses Hart also had only one sale of the same book value to Pereira on 25 August. This possibly, more than any other number, points to the separation within London Jewry even if they were seen by outsiders as one.

This *betweenness centrality* is calculated for all 1720. But the Bubble was not uniformly spread over the year. Taking this into account, we find that the centrality of Pereira and Hart changed quite dramatically over the course of the Bubble. In January, Francis Pereira had only two sales: to Anne Saville and Joseph da Costa, while Moses Hart had no transactions. Schematically for Pereira, these are the equivalent of two rays from a node (such as lines 1 and 5 from node A in Figure 3). In February, he had two sales and two purchases, while in March, Pereira again had only two transactions: buying from Sarah Maria Trip (of Amsterdam), and selling to John Furly. By June, Pereira was buying from and selling to more people. A diagrammatic representation of his June activity is given in Figure 4 with the arrows showing the direction of flow of shares. Despite the larger number of transactions, only one took place with another London Jew, Ferdinand

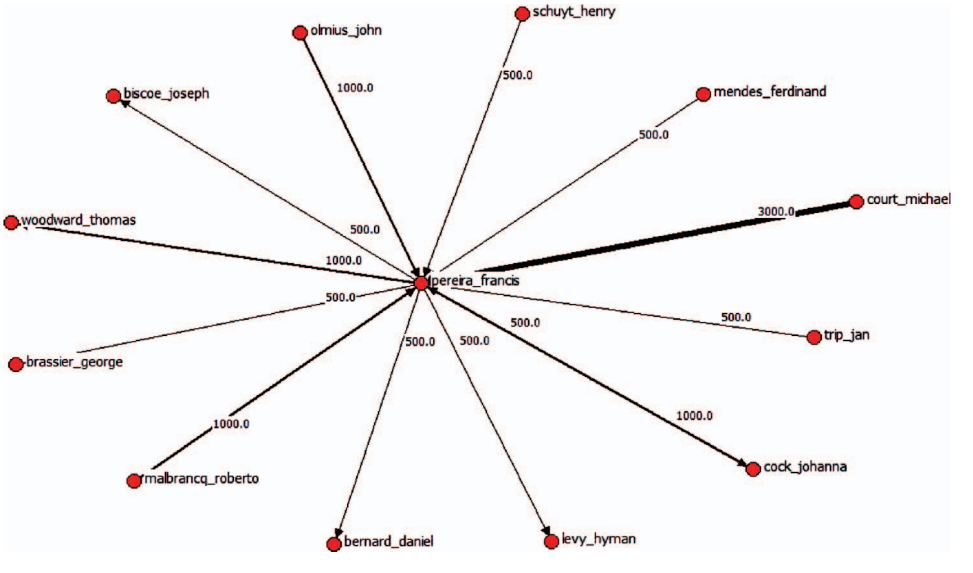


Figure 4. June transactions of Francis Pereira.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Mendes. Four of his seven purchases were from sellers living in Amsterdam, with one purchase of £3000 book value from Michael Court of Amsterdam. One of his other transactions was from a fellow broker, Johanna Cock, who was also connected with the Dutch community.[34] His June activities clearly reflect his mercantile and family social capital within the Amsterdam Jewish community. The strength of his networks within this community was further enhanced when his daughter married and lived there.[35]

By August, Pereira was possibly the major player in the market, with ten sale transactions and 43 purchases. Figure 5 shows a much more complex and dynamic situation than any month earlier. Relative to the hub and spoke pattern of July, his trades in August was much more complex, with interactions between sets of individuals revolving around Pereira. Even though Pereira has only ten sales in August, there were seven sales to other members of the Sephardic community and one extremely large sale of £6000 to Peter Delmé, another major broker of bank stock. Involvement of the Sephardic community can be seen also with members of the da Costa family having 40 purchases between them. Pereira's purchase pattern is much more diffuse: only six came from Amsterdam and four from other Jews, including the one from Moses Hart. Many of his purchases were from individuals who were themselves involved in large numbers of transactions and so might be considered in the middle levels of those active in bank stock. Pereira was not buying from the small seller. Pereira was involved in fewer transactions in the final three months of 1720 and ends the year as a net purchaser of over £50,000 book value of bank stock. On 1 January 1721, Pereira held £93,105 book value and continued to be a major shareholder in bank stock throughout the 1720s.

The centrality measures showed Moses Hart as a central player in the market. However, he is important during only a few months. Whereas Pereira was involved in 171 transactions, Hart was involved in only 72. And while Pereira was in the market in each month, Hart did not have his first transaction in bank stock for 1720 until May, when he

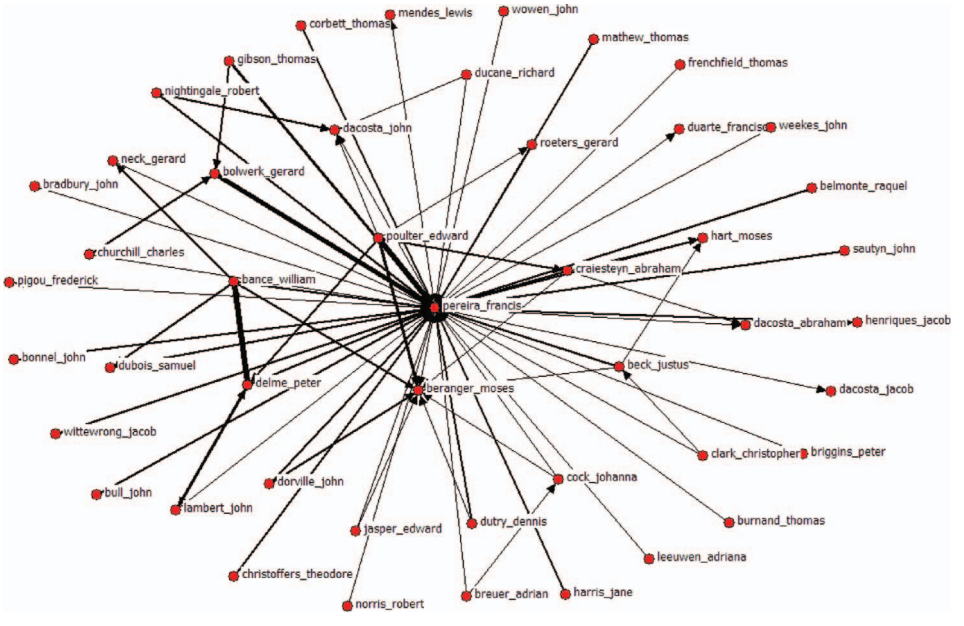


Figure 5. August transactions of Francis Pereira.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

sold £500 book value of stock and had his last transaction in October. In June, as seen in Figure 6, Hart was more involved in the market with 19 transactions; as with Pereira, six of his nine purchases were from sellers living in Amsterdam and three of his sales were to two Sephardim, again reflecting religious and locational networks.

Hart also sold £6000 book value in three sales to George Caswall, one of the top two brokers in bank stock. In contrast to Pereira, his August transactions were less complex (Figure 7), and he ended the year with a zero net position in Bank of England stock for 1720.

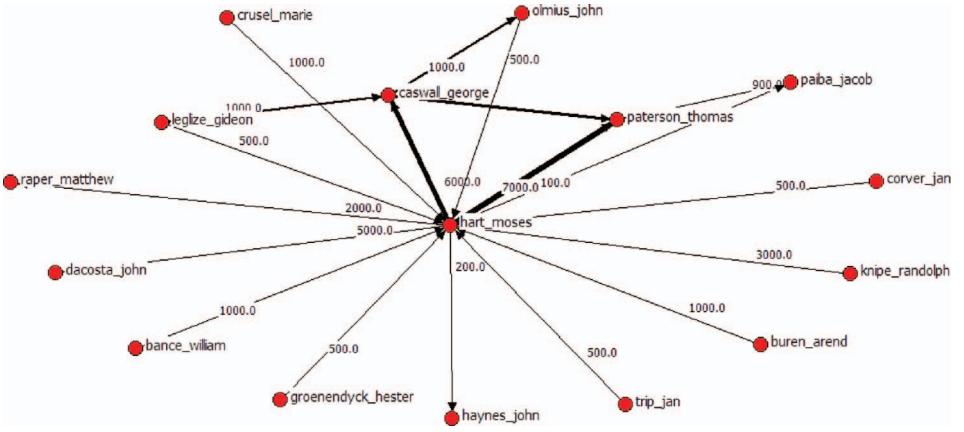


Figure 6. June transactions of Moses Hart.

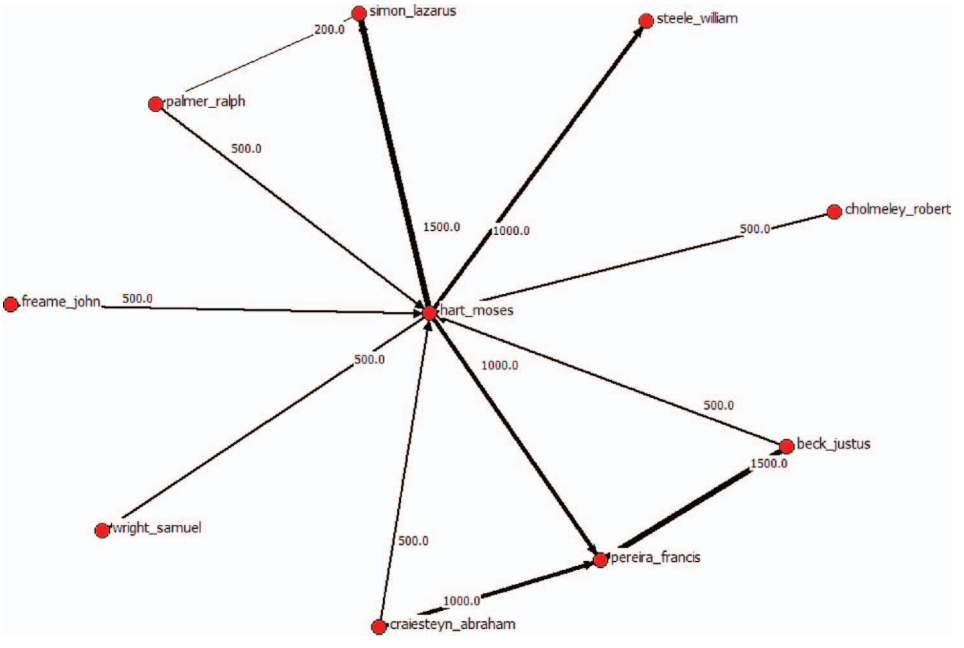


Figure 7. August transactions of Moses Hart.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Analysis

Francis Pereira and Moses Hart were two of the more important players in the market for Bank of England stock in 1720. However, they were not the largest nor were they important. The two most important broker/dealers were Sir George Caswall and Robert Westley, who have the highest centrality measures. During 1720, both Caswall and Westley had roughly 500 transactions each in bank stock. Despite having roughly the same number of purchases, the book value of Westley's transactions, £211,769, was roughly one-third that of Caswall at £762,962.[36]

Caswall and Westley came from and operated in very different strata of London society, but both were Gentiles. Caswall was a knight and could be considered a member of the elite, while Westley was a merchant tailor. Figures 8 and 9 describe June's transactions for both men.

By and large Westley bought and sold from those further down the social ladder: shopkeepers, textile workers and smaller merchants (see Carlos & Neal, 2006, for more discussion). Most of Westley's customers purchased from him or sold to him only once. Segmentation of the market by income or social class is visible both in the occupations of those with whom he trades and in that none of Westley's sales were to members of London's Sephardic community: Pereira, Hart, da Costa, Levy or Henriques. He did have one purchase of £700 from Solomon Medina, a Sephardim, on 3 November 1720. Another feature of Westley's transactions was that few were outside of London and none with shareholders in Amsterdam. Caswall clientele were more often from the social elite and mercantile classes. As is evident in his June transactions, he is involved in sets of intersecting groups. But he, like Westley, had very few transactions with Jews. He has only one contact with Pereira and four with Moses Hart, three of which are in June. Thus, for both Westley and Caswall, the social and occupational networks visible in their

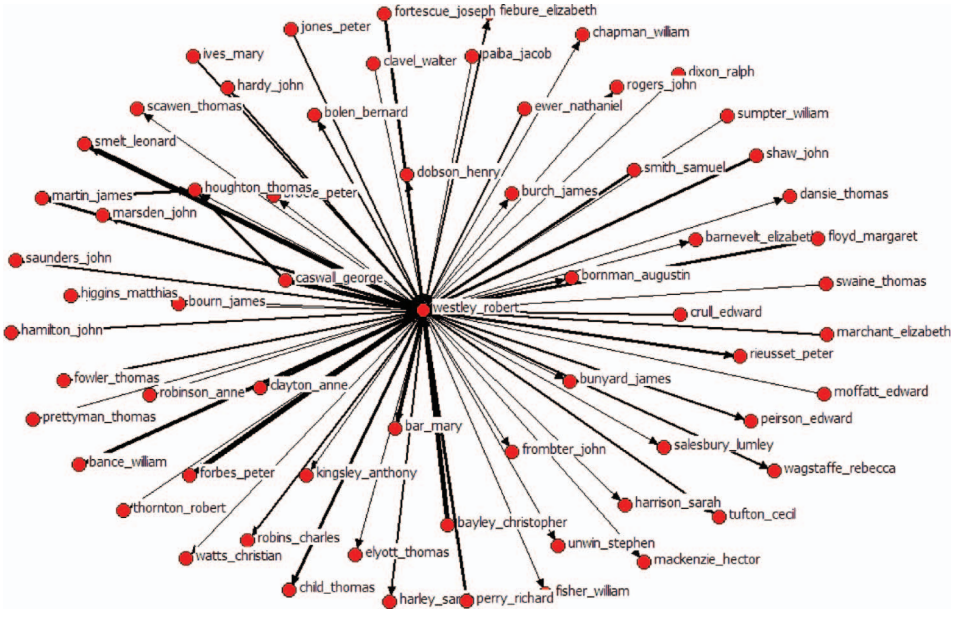


Figure 8. June transactions of Robert Westley.

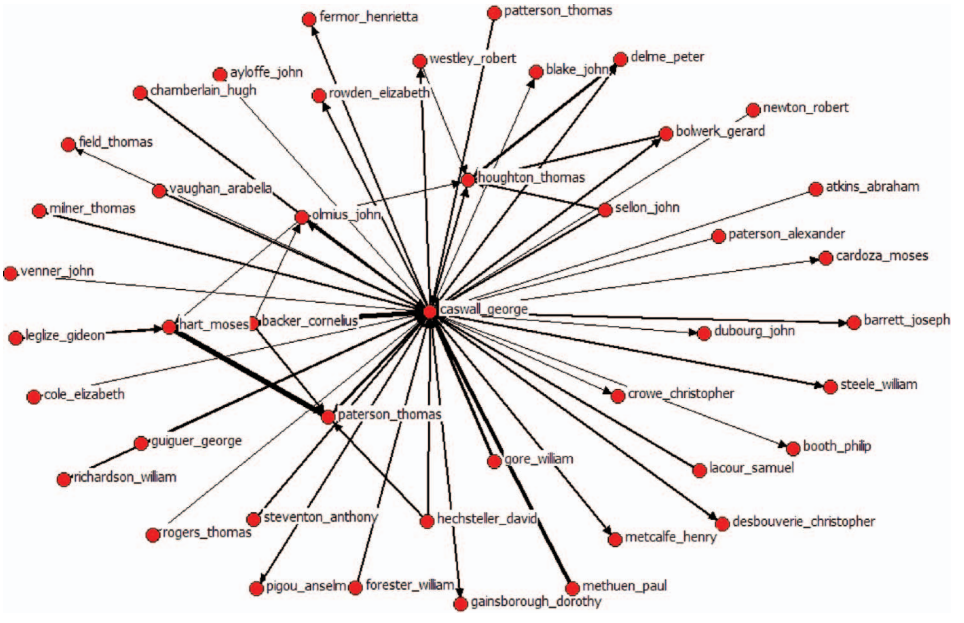


Figure 9. June transactions of Sir George Caswall.

transactions speak to social, family, occupational or political connections. Connections with the Jewish communities were limited.

Francis Pereira and other members of the Sephardic community became important players only in August, when the Bubble began to break. In 43 purchases, Pereira bought £39,000 of bank stock and laid off £20,000 of this in ten separate transactions in the same month. As noted earlier, six were to other members of the Sephardic community: Jacob, Abraham and John da Costa, Jacob Henriques and Lewis Mendes in London, and Francisco Duarte in Amsterdam. Solomon Pereira bought a £15,000 book value in August and had no sales.

August 1720 was the critical month for London's financial sector. The downturn in share prices was the beginning of the end of the Bubble. Without the actions of the Sephardic community in August and September, prices for bank stock would have fallen far faster than they did. Pereira's role in August is evident not only in terms of the volume of purchases, but also in the far greater complexity of his activities. But hidden within these data and graphs is the possibility that Pereira may have been stepping into the market to replace Sir George Caswall, who, as a director of the South Sea Company, would ultimately spend some months in the Tower of London. From being the most important broker for Bank of England stock, Caswall had merely two transactions in August and five in the remainder of 1720. The other principal broker, Robert Westley, had only 12 purchases in August. Indeed, Westley probably did not have the financial resources to buy £39,000 book value in one month as did Pereira. Pereira appears to have become the lynchpin of the market. In essence, the Sephardic community stepped in to act in the role of modern central bankers helping to slow down the fall in prices and perhaps to provide a much softer landing for this Bubble, at least for bank stock. Without the Sephardic presence, there might have been significantly more disruption within the financial and mercantile communities because to the extent that shares were used as business collateral, as prices fell, so would the value of that collateral within the financial community.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

If we consider the market as a pyramid from large brokers at the top down to the incidental transactions at the bottom, or as a set of concentric circles with the large broker/jobbers in the centre and smaller agents farther out, Jewish traders had contact with the market at the top/centre and from the international periphery. Their links to the market were very specialised. Jewish agents used their social capital to link friends, family and community in Amsterdam to the burgeoning market in London. At the same time, Pereira and Hart were very much part of an elite London financial community, and had connections at the top of the pyramid. Indeed, Hart, a registered broker, was the London agent for John Law. Law, who was purchasing South Sea company stock, had been instrumental in creating the Mississippi Company and the Banque Royale in France. For his part, Pereira was involved in the financing of the government's national debt (Neal, 1990). Yet despite this prominence, it was not until August that there was evidence of their having a serious presence in the market for bank stock as investors or brokers.

The pamphlet literature and the public press in the mid-eighteenth century played on the idea that Jews were a 'knavish people'; dishonest and unscrupulous; ready to cheat others in order to make money. Their activities across the South Sea Bubble allow us to look more closely at this assertion. During 'bubble' periods people have the opportunity to make speculative gains or losses. Our previous work estimated that, on aggregate over 1720, the almost 4000 investors in bank stock had a net loss of £7 per head although the net losses were unevenly distributed, for instance, men lost and women gained (Carlos & Neal, 2006).[37] When we consider how Jews fared, we find that as a group they experienced serious financial losses. Jews had speculative losses of £780 per person. These financial losses were generated because shares were purchased at prices higher than they were sold. For those who continued to hold these shares, the end of year price was the same as in January, and prices stayed at this level for the next two years. Pereira ended the year a net purchaser of £60,000 book value of shares, many of which he purchased in August. The market price on 31 December was 147 above par, while it had ranged from 230 to 245 above par in August. Thus far from being a knavish people who were 'so dextrous in bargaining that it is impossible for Christians to expect any advantage in their dealings with them', London's Jewish investors in Bank of England stock lost heavily during the Bubble.

There can be little doubt that the Sephardic community used its financial capital to smooth the downturn in bank stock. Whether this was done deliberately or accidentally is something that we currently do not know. It is perhaps too easy to think that perhaps this was a 'price of admission' for greater social access and acceptance. Endelman (2002) gives the example of Samson Gideon who married a Protestant and baptised his children. His daughter married the second Viscount Gage with a dowry of £40,000, and he obtained a baronetcy for his son. Certainly, the da Costas and the Pereiras, along with other Sephardic families, were buying country estates in Surrey and Stanmore during this period (see Sutcliffe, 2004). Yet assimilation probably took place on a family by family basis. When Anthony da Costa applied for admission to the Russia Company in 1727, he was refused. Even when the Attorney General ruled in his favour, he still was not admitted (Endelman, 1979).

Perhaps more compelling is to argue that the memory of financial panics in Amsterdam in the 1680s and earlier in the century in Vienna made London's Sephardic community especially aware of the consequences of a collapse of the financial system. A collapse would have brought bankruptcies and panic not just to the financial sector but would have quickly spread to the mercantile and international trading sectors. It is perhaps not unreasonable to think that London's Jews were protecting their own large trading and

Downloaded by [Stony Brook University] at 08:41 14 October 2014

mercantile networks and by extension the mercantile community more broadly. By absorbing losses, they preserved their pre-existing social capital in international markets, while advancing their credibility among London financiers, who possessed the cultural, political or financial authority to dispense social capital where London's Jews had begun to build their homes and livelihoods.

Acknowledgements

The authors acknowledge and thank the National Science Foundation (No. 1535804) for the funding that made this research possible. We are very grateful to Janet Jacobs, Cormac Ó Gráda, Pamela Walker Laird and the Geary Seminar in Behavioural Economics for extensive and helpful comments. All errors remain our own.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Notes

1. We are using the term broker to mean someone who stands ready to buy or sell; not as legal broker which was defined by law and limited in number, nor to mean a broker in commodities.
2. Potentially they were in a position to broker over structural holes in English and Dutch networks (see Burt, 2002).
3. For a broader discussion of the role of brokers in the Bank of England stock, see Carlos, Neal, and Wandschneider (2007).
4. Ferdinand and Isabella of Spain expelled Jews ostensibly to prevent contact between professing Jews and those, known as New Christians or *Conversos*, who had been baptised (forcibly or otherwise) at the end of the fourteenth century. Some of these New Christians were certainly crypto-Jews (see Endelman, 2002).
5. Some had settled in London in the sixteenth century but were expelled at the end of the century.
6. Based on rabbinic theory derived from Ezekiel 4:6 taking a day to represent a year, the mathematically inclined estimated that the end of the world would occur in 1655 or 1656 (Healey, 1977).
7. See Endelman (2002) for a more complete description of these attempts at expulsion. For population numbers see Endelman (2002) and Pollins (1982).
8. In 1667, the Court of the King's Bench had ruled that Jews could give evidence in court allowing them to swear on the Hebrew Bible. In 1684, Jews were allowed to sue for recovery of debts owed to them (Endelman, 2002).
9. Jonathan's became the physical site of the London stock exchange.
10. Competing with Castaing was Freke's *The Price of the Several Stocks* which ran from March 1714 to June 1722.
11. It also included the days of dividend payment for the major government stocks and the numbers on tallies being paid off by the Exchequer (see Neal, 1990, for a more extensive discussion).
12. For a more complete discussion of the institutional features of the market, see Carlos, Key, and Dupree (1998).
13. These amounts are all in 1720 pounds (see Officer, 2008).
14. The contract drawn up between the Government and the South Sea company did not specify the actual price at which government debt would be exchanged for SSC shares creating the incentive to increase the market price.
15. Issuing stock in instalments was not unusual. Market prices were also driven by defensive measures taken by those companies competing for investors' favour against the booming South Sea Company. A standard response was to mortgage back a portion of outstanding capital stock, reducing the number of shares available for trade, and provided relatively cheap credit to their stockholders that could be used to purchase stock in any company or for other purposes.
16. The price quoted for South Sea Company stock during this period was, therefore, a forward price. The transfer books for the other companies remained open.
17. This occurred when the Company's banking affiliate, the Sword Blade Company, was out of cash. Resolution of the South Sea affair began with the bank treaty in 1722, whereby the Bank of England took on some outstanding South Sea stock, adding nearly £3.5 million to its own capital stock.

18. This does not always mean that the information is correct. Some might believe that prices can only rise.
19. There is a very large body of literature dealing with social capital. A brief but good overview of the topic is to be found in Smith, 'Social Capital', n.d.
20. The one group with clear connections to the outside were those in the rag or second-hand clothes trade.
21. These terms come from Putnam (1995) and refer to the differing ways in which links between groups are created. See also Woolcock (2001) for concise summary of the terms.
22. All of the standard slanders were once again asserted as fact; usury, cheating and ritual murder (Cranfield, 1965).
23. Although a rough metric, this method would, for example, have captured Moses Barrow, a known Jewish sworn broker in 1679.
24. £1 in 1720 is roughly equivalent to £123 in 2005 (Officer, 2008).
25. The aggregate data for the Bank of England come from Carlos and Neal (2006).
26. This is purely an accidental coincidence with the number of Jews in the market.
27. Of course, the variation across individual was very large both within the Jewish community and the whole population of those in the market for bank stock.
28. The standard deviation is high at 0.0218.
29. There were 328 pairs for whom this was their only transaction. Each of these 328 pairs only trades within the pair and neither side has any further links with the rest of the market. We do not include these agents in the distance analysis.
30. This analysis was conducted using Borgatti, Everett, and Freeman (2002).
31. Craiesteyn also has a high centrality measure. He ranked five in our *betweenness* centrality measure.
32. See Carlos, Neal, and Wandschneider (2007) for a discussion of brokers in bank stock.
33. Sir George Caswall was a member of the Sword Blade company and a merchant.
34. See Carlos and Neal (2004) for a more complete discussion of Joanna Cock's activities.
35. Pereira left money to the Amsterdam Synagogue and Bevis Mark Synagogue in London, as well as the Jewish communities in both cities.
36. Using a retail price index, this is the equivalent of £101,277,878 in 2007 pounds. Needless to say, Caswall did not have this amount of money tied up at any point in time but it provides a measure of his stature.
37. Men on average lost £14 per head, while women made £25 per head.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Notes on contributors

Ann M. Carlos is Professor of Economics at the University of Colorado at Boulder and University College Dublin.

Karen Maguire is a graduate student in Economics at the University of Colorado at Boulder.

Larry Neal is Professor Emeritus at the University of Illinois, Urbana-Champaign and Visiting Professor of Economic History at the London School of Economics.

References

Bank of England Archives, Bank of England, London.
Transfer Books 1720 (AC28/1545–1554).
Stock Ledgers (AC27/434–437).
Alphabets to the Stock Ledgers (AC27/430–433).

Borgatti, S.P., Everett, M.G., & Freeman, L.C. (2002). *Ucinet 6 for Windows: Software for social network analysis*. Harvard: Analytic Technologies.

Bourdieu, P. (1983). Forms of capital. In J.G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 41–258). New York: Greenwood Press.

Burt, R.S. (1987). Social contagion and innovation: Cohesion versus structural equivalence. *The American Journal of Sociology*, *92*(4), 1287–1335.

Burt, R.S. (1992). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.

Burt, R.S. (2002). The social capital of structural holes. In M.F. Guillén, R. Collins, P. England, & M. Meyer (Eds.), *New economic sociology: Developments in an emerging field* (pp. 201–247). New York: Russell Sage Foundation.
Carlos, A.M., Key, J., & Dupree, J. (1998). Learning and the creation of stock-market institutions: Evidence from the Hudson's Bay and Royal African Companies, 1670–1700. *Journal of Economic History 58*(2), 318–344.
Carlos, A.M., & Neal, L. (2004). Women investors in the Bank of England in the time of the South Sea Bubble, 1720–1725. *Financial History Review*, *11*(2), 197–224.
Carlos, A.M., & Neal, L. (2006). The micro-foundations of the early London capital market; Bank of England shareholders during and after the South Sea Bubble, 1720–1725. *Economic History Review*, *59*(3), 498–538.
Carlos, A.M., Neal, L., & Wandschneider, K. (2007). Trading connections in Bank of England shares, 1720: The role of market makers. Working paper. University of Colarado. Working Paper Series.
Clapham, Sir J. (1945). *The Bank of England: A history* (vol. 1, 1694–1797). Cambridge: University Press.
Coleman, J.C. (1994). *Foundations of social theory*. Cambridge, MA: Harvard University Press.
Cranfield, G.A. (1965). The 'London Evening-Post' and the Jew Bill of 1753. *The Historical Journal*, *VIII*, 16–30.
Defoe, D. (1719). *Anatomy of exchange-alley: Or, a system of stock-jobbing*. London: B. Smith.
Dickson, P.G.M. (1967). *The financial revolution in England: A study in the development of public credit, 1688–1756*. London: Macmillan.
Endelman, T.M. (c.1979). *The Jews of Georgian England, 1714–1830: Tradition and change in a liberal society*. Philadelphia: Jewish Publication Society of America.
Endelman, T.M. (1991). English Jewish history. *Modern Judaism*, *11*(1), 91–109.
Endelman, T.M. (2002). *The Jews of Britain, 1656 to 2000*. Los Angeles: University of California Press.
Goldish, M. (1994). Jews, Christians and Conversos: Rabbi Solomon Aailion's struggles in the Portuguese community of London. *Journal of Jewish Studies*, *45*, 227–257.
Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, *78*(6), 1360–1380.
Granovetter, M. (1983). The strength of weak ties: A network theory revisited. *Sociological Theory*, *1*, 201–233.
Granovetter, M. (2005). The impact of social structure on economic outcomes. *Journal of Economic Perspectives*, *19*(1), 33–50.
Grassby, R. (1995). *The business community of seventeenth century England*. Cambridge: Cambridge University Press.
Healey, R.M. (1977). The Jews in seventeenth-century Protestant thought. *Church History*, *46*, 63–79.
Horowitz, E. (1989). Coffee, coffeehouses, and the nocturnal rituals of early modern Jewry. *American Jewish Studies Review*, *14*, 17–46.
Huckfeldt, R., & Sprague, J. (1987). Networks in context: The social flow of political information. *The American Political Science Review*, *81*(4), 1197–1216.
Kelly, M., & Ó Gráda, C. (2000). Market contagion: Evidence from the panics of 1854 and 1857. *The American Economic Review*, *90*(5), 1110–1124.
Israel, J.I. (1998). *European Jewry in the age of mercantilism, 1550–1750*. London: Littman Library of Jewish Civilization.
Israel, J.I. (2002). *Diasporas within a diaspora: Jews, crypto-Jews and the world maritime empires (1540–1740)*. Leiden: Brill.
Laurence, E.A. (2008). The emergence of a private clientèle for banks in the early eighteenth century: Hoare's bank and some women customers. Open University, Working Paper.
Montgomery, J.D. (1994). Weak ties, employment opportunities, and inequality: An equilibrium analysis. *American Journal of Sociology*, *99*(5), 1212–1236.
Neal, L. (1990). *The rise of financial capitalism: International capital markets in the age of reason*. New York: Cambridge University Press.
Officer, L.H. (2008). Purchasing power of British pounds from 1264 to 2007. MeasuringWorth. Available at http://www.eh.net/HowMuchIsThat? (accessed September 25, 2008).
Pollins, H. (1982). *Economic history of the Jews in England*. London: Associated University Presses.

Downloaded by [Stony Brook University] at 08:41 14 October 2014

Putnam, R.D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, *6*(1), 65–78.
Putnam, R.D. (2000). *Bowling alone: Collapse and revival of American community*. New York: Simon and Schuster.
Smith, K.M. (n.d.). Social capital. *The encyclopedia of informal education*. Available at http://www.infed.org/biblio/socialcapital.htm (accessed March 2008).
Sutcliffe, A. (2004). Identity, space and intercultural contact in the urban entrepôt: The Sephardic bounding of community in early modern Amsterdam and London. *Jewish Culture and History*, *7*(1–2), 93–108.
Wasserman, S., & Faust, K. (1994). *Structural analysis in the social sciences* (vol. 8). Cambridge & New York: Cambridge University Press.
Wasserman, S. & Galaskiewicz, J. (Eds.). (1994). *Advances in social network analysis: Research in the social and behavioral sciences*. Sage focus editions: 171. Thousand Oaks, CA: Sage Publications.
Woolcock, M. (2001). The place of social capital in understanding social and economic outcomes. *Isuma: Canadian Journal of Policy Research*, *2*(1), 1–17.
World Bank. *What is social capital?* Available at http://www.worldbank.org/poverty/scapital (accessed March 2008).
Yogev, G. (1978). *Diamonds and coral*. New York: Holmes & Meier Publishers, Inc.
Zenner, W.P. (1990). Jewish retainers as power brokers. *The Jewish Quarterly Review*, *81*, 127–149.

Downloaded by [Stony Brook University] at 08:41 14 October 2014